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IN - KAMIYAMA S; KITAHARA K; OHTSUKA K; TAKEMASA N

MC - E10-J02D E11-Q01 E11-Q02 E31-A03 E31-A05 E31-D02 E31-H03 E31-J  
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C805 C807 C810 M411 M424 M750 M903 M904 M910 N163 Q431 Q436 Q439;  
R01066-X R01423-X R01532-X R01738-X R01740-X R01779-X  
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- [03] M210 M211 M212 M213 M214 M215 M216 M220 M221 M222 M231 M232 M233  
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PA - (NIPI-N) NIPPON PIONICS CO LTD

- (NIPI-N) JAPAN PIONICS CO

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- EP0475312 A 19920318 DW199212 013pp

- JP5004809 A 19930114 DW199307 C01B23/00 007pp

- US5194233 A 19930316 DW199313 B01D53/04 006pp

- EP0475312 A3 19930127 DW199347 000pp

- US5294422 A 19940315 DW199411 B01D53/04 004pp

- EP0475312 B1 19970115 DW199708 C01B23/00 Eng 007pp

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C22C-016/00 ; C22C-027/02

AB - EP-475312 N2, hydrocarbon, CO, CO2, O2, H2 and H2O impurities (I) in a  
rare gas (II) are removed by contacting (II) with an alloy getter  
(III) contg. 5-90 wt.% V plus a balance of Zr.

- Contact is pref. at 350-700 deg C. Pref. (III) is first activated by  
heating at 500-900 deg C for 10-600 mins. Alternatively (III)  
comprises 5-90 wt.% V, Zr, and opt. Cr, Ni and/or Co. Gas (II) is e.g.  
He, Ne, Ar, Kr or Xe.

- **USE/ADVANTAGE** - Process is continuous and operates at low temp.. Appts. used is small. Purified (II) contain below 1 ppb. (I) and are used in semiconductor mf(Dwg.0/1)
- CN** - R01066-X R01423-X R01532-X R01738-X R01740-X R01779-X R01671-P R03133-P R03134-P R03186-P R08207-P R90120-X
- EPAB-** EP-475312 N2, hydrocarbon, CO, CO2, O2, H2 and H2O impurities (I) in a rare gas (II) are removed by contacting (II) with an alloy getter (III) contg. 5-90 wt.% V plus a balance of Zr.
  - Contact is pref. at 350-700 deg C. Pref. (III) is first activated by heating at 500-900 deg C for 10-600 mins. Alternatively (III) comprises 5-90 wt.% V, Zr, and opt. Cr, Ni and/or Co. Gas (II) is e.g. He, Ne, Ar, Kr or Xe.
- **USE/ADVANTAGE** - Process is continuous and operates at low temp.. Appts. used is small. Purified (II) contain below 1 ppb. (I) and are used in semiconductor mf
- **EP-475312 A** process for purifying a rare gas which comprises contacting the rare gas with a multi-component alloy getter comprising a mixture or alloy of vanadium, zirconium, chromium and optionally cobalt, the proportion of vanadium being from 5 to 90% by weight and the proportion of chromium and optionally cobalt being 0.5 to 20% by weight, each based on the total weight of vanadium and zirconium, to remove nitrogen, hydrocarbon, carbon monoxide, carbon dioxide, oxygen, hydrogen and water as impurities contained in the rare gas.(Dwg.0/1)
- IW** - RARE GAS PURIFICATION CONTACT IMPURE GAS ALLOY GETTER CONTAIN VANADIUM@ ZIRCONIUM@
- IKW** - RARE GAS PURIFICATION CONTACT IMPURE GAS ALLOY GETTER CONTAIN VANADIUM@ ZIRCONIUM@
- INW** - KAMIYAMA S; KITAHARA K; OHTSUKA K; TAKEMASA N
- NC** - 005
- OPD** - 1990-09-14
- ORD** - 1992-03-18
- PAW** - (NIPI-N) NIPPON PIONICS CO LTD
  - (NIPI-N) JAPAN PIONICS CO
  - (NIPA-N) NIPPON PAIONIX KK
  - (NIPI-N) JAPAN PIONICS KK
- TI** - Rare gas purificn. - by contacting impure gas with alloy getter contg. vanadium@ and zirconium@
- USAB-** US5194233 Rare gas contg. impurities is purified by being contacted with an alloy getter, at 350-700 deg.C, to remove one of nitrogen, hydrocarbons, carbon monoxide, oxygen, hydrogen and water as impurity. Alloy getter consists of 80 pts. wt. Zr, 20 pts. wt. V and 5 pts. wt. Cr.
  - **ADVANTAGE** - Impurities can be removed to less than 10ppb partic. to less than 1 ppb at temps. as low as 400-700 deg.C Purificn. can be effected continuously for a long term. Small size appts. can be used with high safety.(Dwg.0/1)
  - **US5294422** Purifying a rare gas contg. impurities comprises contacting the gas at 350-700 deg.C with an alloy getter selected from a) an alloy consisting of V, Zr and Cr, and b) an alloy of V, Zr, Cr and Co. Cr in alloy a) or the total of Cr and Co in alloy b) is in an amt. of 0.5-20 wt. parts. per 100 parts based on the total wt. of V and Zr. V is in an amt. of 5-90 wt.% based on the wt. of V and Zr and is used to

- remove N<sub>2</sub>, CO, CO<sub>2</sub>, O<sub>2</sub>, H<sub>2</sub>, water and hydrocarbons, as impurities contained in the gas.
- Prior to contacting the gas with the getter, the getter is subjected to an activate treatment at 500-900 deg.C for 10-600 (30-400) mins. The rare gas comprises CH<sub>4</sub> as an impurity.
- ADVANTAGE - The method efficiently removes impurities from rare gases.(Dwg.0/1)
- US5194233 Rare gas contg. impurities is purified by being contacted with an alloy getter, at 350-700 deg.C, to remove one of nitrogen, hydrocarbons, carbon monoxide, oxygen, hydrogen and water as impurity. Alloy getter consists of 80 pts. wt. Zr, 20 pts. wt. V and 5 pts. wt. Cr.
- ADVANTAGE - Impurities can be removed to less than 10ppb partic. to less than 1 ppb at temps. as low as 400-700 deg.C Purificn. can be effected continuously for a long term. Small size appts. can be used with high safety.(Dwg.0/1)
- US5294422 Purifying a rare gas contg. impurities comprises contacting the gas at 350-700 deg.C with an alloy getter selected from a) an alloy consisting of V, Zr and Cr, and b) an alloy of V, Zr, Cr and Co. Cr in alloy a) or the total of Cr and Co in alloy b) is in an amt. of 0.5-20 wt. parts. per 100 parts based on the total wt. of V and Zr. V is in an amt. of 5-90 wt.% based on the wt. of V and Zr and is used to remove N<sub>2</sub>, CO, CO<sub>2</sub>, O<sub>2</sub>, H<sub>2</sub>, water and hydrocarbons, as impurities contained in the gas.
- Prior to contacting the gas with the getter, the getter is subjected to an activate treatment at 500-900 deg.C for 10-600 (30-400) mins. The rare gas comprises CH<sub>4</sub> as an impurity.
- ADVANTAGE - The method efficiently removes impurities from rare gases.(Dwg.0/1)

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